A.D. 1831 . . . . . Nº 6102.

SPECIFICATION

OF

JOHN WALLACE.

SHIPS' SAFETY HEARTH.

LONDON
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Ships' Safety Hearth.

WALLACE'S SPECIFICATION.

TO ALL TO WHOM THESE PRESENTS SHALL COME, I, John Wallace, Brazier, in Leith, send greeting.

WHEREAS His present most Excellent Majesty King William the Fourth, by His Letters Patent, under the Great Seal of Great Britain, bearing date at Westminster, the Thirty-first day of March, in the first year of His reign, did, for Himself, His heirs and successors, give and grant unto me, the said John Wallace, His especial licence, sole privilege and authority, that I, the said John Wallace, my exors, admors, and assigns, or such others as I, the said John Wallace, my exors, admors, or assigns, should at any time agree with, and no others, from time to time and at all times during the term of years therein mentioned, should and lawfully might make, use, exercise, and vend, within England, Wales, and the Town of Berwick-upon-Tweed, my Invention of "An Improvement or Improvements in the Safety Hearth;" in which said Letters Patent is contained a proviso, that I, the said John Wallace, shall cause a particular description of the nature of my said Invention, and in what manner the same is to be performed, to be inrolled in His said Majesty's High Court of Chancery within six calendar months next and immediately after the date of the said in part recited Letters Patent, as in and by the same, reference being thereunto had, will more fully and at large appear.

NOW KNOW YE, that in compliance with the said proviso, I, the said John Wallace, do hereby declare that the nature of my said Invention, and

the manner in which the same is to be performed, are particularly described and ascertained in and by the following description thereof, reference being had to the Drawing hereunto annexed, and to the figures and letters marked thereon (that is to say):—

My improvement or improvements in the safety heath consists, first, in applying a smoke jack in the flue or chimney of a safety hearth, and by means of certain other additions hereafter shown and described, forming a ship's safety hearth capable of roasting meat by the power derived from such smoke jack.

Secondly, in suspending or placing safety hearths on a fixed stand or frame, such framing forming a curved railway, whereby the safety hearth will by its gravity always keep its perpendicular position, even at the time of the ship's heeling.

Thirdly, in a particular application of a damper for the purpose of changing the direction of the heated air and frame.

Description of the Drawing.

Figure 1 is a front view of a safety hearth, having my improvements applied thereto, and being the principal Figure in the Drawing referred to, I shall be the more particular in the description of it. It consists of the frame, boilers, and cooking apparatus attached thereto, also a smoke jack for roasting, which jack, although in itself it forms no part of my Invention, I deem it necessary to explain as connected with my safety hearth, in so far as I have introduced it for this purpose. And I have substituted figures instead of letters to denote the particular parts of it, as follows:—In Figure 1, which as well as Figure 3 is supposed to have part of the bulb or cylinder composing the upper part of the flue or chimney removed, in order to shew more clearly the internal construction of the smoke jack. 1, 1, 1, &c., is a horizontal fan, composed of six or more vanes or leaves, attached to an upright axis 2; it occupies the whole internal diameter of the bulb or cylinder, and about one-fourth of the depth of the straight part of it; 2, the upright axis which runs up in the centre of the cylinder, and is driven round by the smoke acting upon the inclined vanes of the fan in its ascent up the flue from the furnace; 3 is a spiral or endless screw cut upon the upright axis 2, which drives a brass cog-wheel consisting of about forty teeth, seen in Figure 3; 4 is the axis of this brass wheel, having a pulley near its end, for receiving a chain to turn the spit, and runs in a centre made in the bar 5, which I call the pivot rest, drawn separately in Figure 21; 6 is an iron arm, on which several parts of

the jack are fixed, more clearly seen in the bird's-eye view, Figure 20; and in this Figure the pivot rest 5 is attached at its extreme end to keep it in its place; 7 is an oil box, the end of which is only seen in this Figure resting upon the bar 6, but it is best seen in Figure 3. Figure 3 is an end view, in which 6 is still farther explained; it is here seen lengthways, and is turned down at each end, and secured to the cylinder by two screw bolts, as indicated by the Drawing 7, the oil box, already referred to; it is made of cast iron or other suitable material, and is supposed to have the side next the observer removed, in order to shew how the upright axis moves in the bottom of it in a centre; it is introduced into the side of the cylinder by a hole cut for it, and projects out from the side, and it also projects at the other end a little beyond the centre of the cylinder, for the purpose of fixing a piece of metal 13, through which the upright axis descends; and this piece of metal 13 acts as a guide in case (if by any accident) the axis should come out of the centre. 8 is the wheel acted upon by the endless screw 3, and having at the end of its axis or pulley, best seen in Fig. 1; opposite this wheel the pivot rest is best seen, being fixed obliquely that the chain may not be interrupted, which it would be if placed perpendicularly; 9 is another oil box, of a cylindrical form, to contain oil to lessen the friction on the axis; 10 is an arm for the upright axis to work in; it is bent down a little into the oil box to come in contact with the oil, and is fixed on another arm 11 by a screw nut; 11 is an upright arm, attached to the oil box by a screw bolt or other means; 12 is another arm for fixing the other end of the arm 10, and it is also fixed to the oil box in the same manner as 11. Fig. 20 is a bird's-eye view of the cylinder, in which the position of the wheel 8 is seen fixed on its axis; this axis is passed through a hole in the side of the cylinder, and the other end moves in a piece of iron fixed on the inside of the oil box 7; 2 is the centre of the upright axis; the relative position of the iron arm 6, the axis 4, and the pivot rest 5, and the pulley, are here seen. Fig. 21 is the pivot rest, having a square hole at the one end for taking on to the bar 6, and a round hole at the other end for the axis 4 to move in. In this Figure the arm 6 is also represented as passed through the cylinder by a hole made for the purpose; it is made strong for holding the pivot rest firmly. I may here state that I occasionally use a cover for the brass wheel and spiral or endless screw, which cover rests upon or is attached to the oil box; I have also a cover, which is applied over the projecting end of the oil box, with a space between the said cover and the oil box for the admission of cool air into the jack apparatus to prevent it as much as possible from being dirtied and injured by

the hot vapour and smoke, which impel it in its ascent up the flue; although this is not absolutely necessary, yet I would recommend the use of such covers to the jack, particularly in distant voyages, and where there is a large ship's company. Figure 4 is a side section of the ship's hearth, and Figure 5 is a front section, having the cover or upper part of the flue or chimney removed in order to admit the smoke jack being put into its place; Figure 6 is a plan with some of the parts removed, whereby the construction will more readily be seen. In all these Figures the same letters of reference indicate similar parts, and such is also the case with reference to the other Figures shown in the Drawing.

On the cylinder, Figures 1 and 3, there is a pulley affixed for receiving and driving an endless chain A for turning the spit B, which is formed similarly to those commonly employed; G is a pulley affixed to one end of the spit, which receives motion and is actuated by the endless chain A; D, D, are the two side plates, which have gaps or slits E cut into them for the purpose of receiving the spit; F, F, are the hooks by which they are affixed in their proper places, and are supported and retained by the bars or rods G. These side plates are seen separately in Figure 7, and in their places in Figures 2, 3, and 4. The bars or rods G and rods H are affixed to the front plate I, and slide in holes J, Figure 5, cut into the framing of the ship's hearth. The rods G support the side plates D, D, and the rods H support the dripping pan K, which dripping pan is shown separately in Figures 8, and in its place in Figure 5. Figure 9, L is a cover which rests on the front plate I, and on the front on the fire place, as shewn in Figures 1, 2, and 3. The object of the rods or bars G, H, sliding into the holes J is that the side plates D, D, the spit B, dripping pan K, and cover L may be removed, and the front plate I shut against the bars of the grate or fire-place when roasting is not going on; previous to which, a metal plate, Figure 22, is put over the front grate to prevent the cold air from passing between the top of the fire; this metal plate is fixed by two pieces of iron, as represented thereon, by two holes made in the frame to receive them, and it slips out and in at pleasure; it has also two handles to left it by. M are the front bars or grating of the fire-place, which I prefer to be in nearly a vertical position; they are seen in Figures 4 and 5, and the bottom grating or fire-bars N are shown in Figures 4 and 6; O, Figures 2 and 4, is the ash-pit, and P is a pan or trough to receive the ashes from the ash-pit, such pan being shown separately at Figure 10; Q, Figure 2, is the door for feeding the fire with fuel; Figure 11 shows an inside view of the front plate I, and also a side view of the same separately;

R is the oven which runs from side to side, having a door at each end, as shown in Figures 2 and 3; S, S, are two boilers, one of which is shown in section, and in plan, separately at Figure 12, together with a section of the steaming vessels T, but such steaming vessels being well understood, and forming no part of my Invention, and as their shapes are clearly shown in the Figures of the Drawing, no further description will be necessary. *a*, *a*, are two boilers, which are placed over the fire place and on the top or hot plate *b*, in which there are two openings cut for the purpose of putting in a saucepan when the boilers are not on the top; these openings are covered at other times with the circular plates *c*; one of the boilers *a*, *a*, is shown separately at Figure 13, having its steaming apparatus T at top; but when steaming is not required the covers are made to fit the boiler *a*, and the steaming apparatus may be removed; Figure 14 shows two plans at the bottom of the steaming apparatus T, *d*, *d*, *d*, *d*, being the openings formed in the corners for the steam to pass through; and *e*, *e*, *e*, *e*, are the top to turn the steam downwards in the direction of the arrows. Figure 15 shows a plan of the boiler *a* having a perforated plate or strainer for taking out fish or other substances boiled in the boiler *a*.

In Figures 1, 2, 3, 4, 5, and 6, the safety hearth is shown as placed on a curved stand or frame, which forms a railway upon which the hearth can move from side to side in case of the heeling of the ship or vessel, and whereby the hearth will be kept in its perpendicular position; the construction of this frame will be clearly understood by an examination of Figure 16, in which Figure, as well as in the other Figures above named, *f* represents the frame or rails on which the hearth is placed, the frame or rails *f* being strongly fixed to the deck or flooring of the ship or vessel by bolts or screws (as is shown in Figure 6); *g*, *g*, are friction rollers affixed to the part *h* of the framing, which is attached to the under side of the safety hearth; the form of this part *h* will be clearly understood by examining Figure 16, and also Figure 17, which is a cross section, and Figure 18, which is a view of the under side of the parts *h* and the friction rollers *g*, *g*; the upper parts of the frame or rails *f* have projecting edges *i*, *i*, see Figure 17, and the under parts *j* of *h* are turned inwards, and this prevents the safety hearth being thrown off the framing or rails *f*; *k* is a bar passing around the boilers *a* to retain them in their places; *m*, *n*, Figure 4, are the flues passing from the fire to the chimney U, *m* being the flue under the boilers S, S, and *n* being the flue which passes over the over; these flues *m* and *n* are divided by an iron plate *o*.

p is a damper which may be made to turn on its axis by the handle *q*, Figures 1 and 2, and retained in any position by the sliding catch *r* entering

into a notch cut in a wheel affixed on the axis of the damper *p*, as shown in the Drawing, and by this means the fire may be damped off from the boiler or the oven, or by placing it horizontally the fire may be made to act on the top of the oven and at the bottom of the boilers; V, Figure 2, is a hole cut through the side of the heath for the admission of air, which passes into the chamber W at the back of the fire-place, and thereby becomes heated; from thence it passes under the front of the oven at Y into the space which is beneath the perforated plate X, which extends the whole length of the oven; and under this perforated plate X the space is filled with sand, so that the heated air from the chamber W mixes therewith and heats it, and thus I am enabled to get a bottom heat to the oven.

Having now described the various parts represented in the Drawing, I would have it understood, that although I have shown and described various parts which are well known and in use, yet I do not claim them as any part of my Invention; what I claim is,—

First, the application of a smoke jack to the chimney or flue of a safety hearth, and the other additions whereby such safety hearth is made capable of roasting by means of the power derived from such smoke jack.

Secondly, I claim the placing or mounting of a safety hearth on a carved railway, whereby it will be kept in its perpendicular position in case of the heeling of the ship or vessel.

Thirdly, I claim the application of the damper *p* and double flue, whereby the fire and flame may be shut of from the boilers or ovens when not in use, whether they be applied separately or together in a ship's hearth.

In witness whereof, I, the said John Wallace, have hereunto set my hand and seal, this Twenty-first day of September, in the year of our Lord One thousand eight hundred and thirty-one.

JOHN (L.S.) WALLACE.

Taken and acknowledged by John Wallace (party hereto), at Leith, the Twenty-first day of September 1831, before me,

JAS WISHURT, J. P.

This is the Specification referred to in the Affidavit sworn before me, the 26th day of September 1831, at the Public Office,

G. B. ROUPELL.

CHARLES VERTUE, of Adam Court, Old Broad Street, in the City of London, Gentleman, maketh oath, and saith that he is acquainted with the handwriting of James Wishurt, of Leith; and this deponent further saith, that

the signature to the acknowledgement of John Wallace's Specification is in the handwriting of the said James Wishurt, and that he was to the best of his knowledge and belief a Justice of the Peace at the time of taking such acknowledgement.

5 CHARLES VERTUE.

Sworn at the Public Office, Southampton Buildings, the 26th day of September, 1831, before me,

G. B. ROUPELL.

10 **AND BE IT REMEMBERED**, that on the oath of Charles Vertue, the Specification aforesaid was inrolled word for word as above written. And also the Specification aforesaid was stamped according to the tenor of the Statute made for that purpose. By Aff^t.

Inrolled the Thirtieth day of September, in the year of our Lord One
15 thousand eight hundred and thirty-one.

LONDON:
Printed by GEORGE EDWARD EYRE and WILLIAM SPOTTISWOODE,
Printers to the Queen's most Excellent Majesty. 1857.

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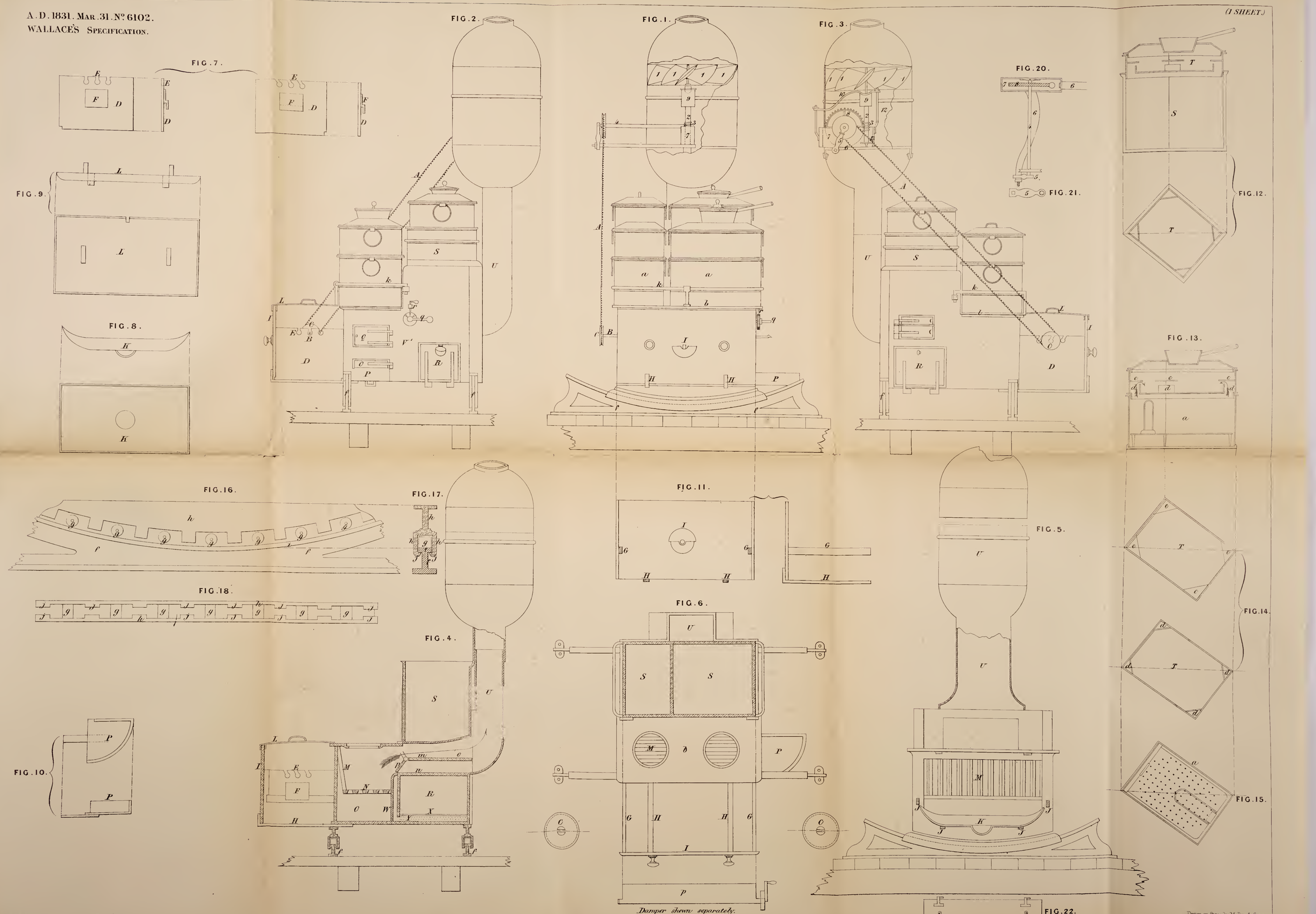
WALLACE'S Specification.

(1 SHEET.)



The outlined drawing is colored.

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